**RESPONSE TO COMMENTS**

City of Wapato (WA 005022-9)

On October 20, 2003, the Environmental Protection Agency (EPA) proposed a draft National Pollutant Discharge Elimination System (NPDES) permit to the City of Wapato for the discharge from the Wapato Municipal Sewage Treatment Plant. The plant provides secondary treatment and disinfection prior to discharge to Drainage Way No. 2. The public comment period for the draft permit for the City of Wapato facility began on October 20, 2003, and expired on December 4, 2003. The only comments received were from the City of Wapato.

The EPA received comments from the City of Wapato in a letter from Donald Sellwagen, Mayor, dated December 2, 2003. This document represents EPA's response to the comments received during the comment period.

**Comment 1**: Page 5, Section I., Table 1 - Outfall 001 Effluent Limitations and Monitoring Requirements: The average monthly limits and daily maximum limits for total ammonia as N, which come into effect 4 years and 6 months from the effective date of the permit, should be verified based on the review of the limits calculated in Tables F-1 and F-2 of the Draft Fact Sheet. From our review of the calculations, we believe the correct limits are: Total Ammonia as N (April 1 through October 31) - Average Monthly Limit = 1.35 mg/l (13.1 lb/day), Daily Maximum Limit = 2.45 mg/l (23.1 lb/day) and Total Ammonia as N (November 1 through March 31) - Average Monthly Limit = 1.45 mg/l (14.0 lb/day), Daily Maximum Limit = 2.65 mg/l (25.6 lb/day).

**Response:** EPA agrees that a review of the calculations was needed. The reason for the error between EPA's calculation in the Fact Sheet and the results shown below was because EPA used the wrong CV in calculating the limits in the Fact Sheet and draft NPDES Permit, while the Fact Sheet states the correct CV, after reviewing the calculations EPA noticed that the correct CV was not used in the actual calculations. Using the correct CV provided the following results: Total Ammonia as N (April 1 through October 31) - Average Monthly Limit = 1.2 mg/l (11.9 lb/day), Daily Maximum Limit = 2.5 mg/l (24 lb/day) and Total Ammonia as N (November 1 through March 31) - Average Monthly Limit = 1.3 mg/l (12.7 lb/day), Daily Maximum Limit = 2.7 mg/l (25.8 lb/day). Below are the corrected tables for Permit Limit Derivation, and Final Effluent Limits.

| Summary of Permit Limit Derivation for Outfall 001 at Drainage Way No. 2 During the Irrigation Season | | | | | | | |
|---|---|---|---|---|---|---|---|
| Parameter mg/l | Wasteload Allocation (WLA) | | Long Term Average (LTA) | | Effluent Limits | | |
| | Acute WLA | Chronic WLA | Acute LTA | Chronic LTA | Basis | maximum daily limit (MDL) | average monthly limit (AML) |
| Chlorine | 0.024 | 0.039 | 0.017 | 0.033 | acute | 0.024 | 0.018 |
| Ammonia | 8.77 | 1.51 | 2.769 | 0.785 | chronic | 2.5 | 1.2 |

| Summary of Permit Limit Derivation for Outfall 001 at Drainage Way No. 2 During the Non-irrigation Season | | | | | | | |
|---|---|---|---|---|---|---|---|
| Parameter µg/l | Wasteload Allocation (WLA) | | Long Term Average (LTA) | | Effluent Limits | | |
| | Acute WLA | Chronic WLA | Acute LTA | Chronic LTA | Basis | maximum daily limit (MDL) | average monthly limit (AML) |
| Chlorine | 0.019 | 0.011 | 0.014 | 0.009 | chronic | 0.013 | 0.010 |
| Ammonia | 11.91 | 1.61 | 3.763 | 0.842 | chronic | 2.7 | 1.3 |

| Comparison of Technology-based Effluent Limits to Water Quality-based Effluent Limits | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Parameter | **Technology-based Effluent Limits** | | | | **Water quality-based Effluent Limits** | | | | **Final Effluent Limits** | | | |
| | AML | AWL | IML | range | AML | AWL | IML | range | AML | AWL | IML | range |
| $BOD_5$ | 30 mg/L | 45 mg/L | — | — | — | — | — | — | 30 mg/L | 45 mg/L | — | — |
| | 290 lbs/day | 435 lbs/day | | | — | — | | | 290 lbs/day | 435 lbs/day | | |
| $BOD_5$, Percent Removal | 85 | — | — | — | — | — | — | — | 85 | — | — | — |
| TSS | 30 mg/L | 45 mg/L | — | — | — | — | — | — | 30 mg/L | 45 mg/L | — | — |
| | 290 lbs/day | 435 lbs/day | | | — | — | | | 290 lbs/day | 435 lbs/day | | |
| TSS, Percent Removal | 85 | — | — | — | — | — | — | — | 85 | — | — | |
| Fecal Coliform Bacteria | — | — | — | — | 100/100 ml | 200/100 ml | — | — | 100/100 ml | 200/100 ml | — | — |
| Total Ammonia as N (April 1 to Oct. 31) Compliance Schedule Limits | — | — | — | — | 8.2 mg/l | 16 mg/l | — | — | 8.2 mg/l | 16 mg/l | — | — |
| | | | | | — | — | | | — | — | | |
| Total Ammonia as N (April 1 to Oct. 31) | — | — | — | — | 1.2 mg/l | — | 2.5 mg/l | — | 1.2 mg/l | — | 2.5 mg/l | — |
| | | | | | 11.9 lbs/day | | 24.0 lbs/day | | 24.0 lbs/day | | 11.9 lbs/day | |
| Total Ammonia as N (Nov. 1 to March 31) | — | — | — | — | 1.3 mg/l | — | 2.7 mg/l | — | 1.3 mg/l | — | 2.7 mg/l | — |
| | | | | | 12.7 lbs/day | | 25.8 lbs/day | | 12.7 lbs/day | | 25.8 lbs/day | |
| Total Residual Chlorine (April 1 to Oct. 31) | 0.5 mg/L | 0.75 mg/L | — | — | 0.018 mg/l | — | 0.024 mg/l | — | 0.018 mg/l | — | 0.024 mg/l | — |
| Total Residual Chlorine (Nov. 1 to March 31) | 0.5 mg/L | 0.75 mg/L | — | — | 0.010 mg/l | — | 0.013 mg/l | — | 0.010 mg/l | — | 0.013 mg/l | — |
| pH | — | — | — | 6.0-9.0 | — | — | — | 6.5-8.5 | — | — | — | 6.5-8.5 |

AML means Average Monthly Limit
AWL means Average Weekly Limit
IML means Instantaneous Maximum Limit
— means no limit

**Comment 2**: Page 5, Section I., Table 1 - Outfall 001 Effluent Limitations and Monitoring Requirements: As discussed in our review comments of Table 3 of the Fact Sheet, we ask that the sample frequencies be changed as follows: Fecal

Coliform Bacteria - 1 per week, and pH - 5 per week. For clarity, it may also be beneficial to change the term "weekly" used in this table to "1 per week."

**Response:** EPA agrees with the comment, the Final Permit has been changed accordingly.

**Comment 3**: Page 7, Section II.B.3., Annual Report of Progress: Based on the anticipated effective date of the final permit of around February 1, 2004, we ask that the submittal date for the Annual Report of Progress be revised to October 1, 2004, and annually thereafter, until compliance with the ammonia effluent limits is achieved.

**Response:** EPA agrees with the comment, the Final Permit has been changed. However, the date was changed to October 1, 2005.

**Comment 4**: Page 8, Section II.C.2.a., Chronic Test Species and Methods: The first sentence of paragraph a. should be revised to read, "For outfall 001, chronic tests must be taken 4 times during the life of the permit."

**Response:** EPA agrees with the comment, the Final Permit has been changed accordingly.

**Comment 5**: Page 9, Section II.D., Surface Water Monitoring: To be consistent with the Fact Sheet, the term "surface water monitoring" should be replaced with the term "receiving water monitoring" throughout this section of the permit.

**Response:** EPA agrees with this comment, however, EPA should have had the Fact Sheet label the monitoring as “surface water monitoring.” EPA will reflect this change in Wapato’s file, and no change the Final Permit is needed.

**Comment 6**: Page 10, Section II.D.6: The cross reference to the Quality Assurance Plan should be corrected to read "Part I.E."

**Response:** EPA agrees with the comment, the Final Permit has been changed accordingly.

**Comment 7**: Page 12, Section II.A.: The last sentence of the second paragraph should be revised to read, "... for those parameters listed in Part I.A. of this permit ..."

**Response:** EPA agrees with the comment, the Final Permit has been changed accordingly.

**Comment 8**: We are very concerned about the effluent ammonia limits specified in the permit. It will not be possible to comply with the proposed limits (effective 4 years and 6 months after the effective date of the permit) without extensive and costly modification of our existing treatment process. Our treatment plant uses fixed-film technology (submerged biological contactors and rotating biological contactors) to provide secondary treatment of the influent. This process was specifically designed to remove biochemical oxygen demand and total suspended solids, but not ammonia. When our treatment plant was upgraded in the 1970s, using Federal funding through the Clean Water Act, this fixed-film process was approved as a known and reasonable treatment method needed to meet effluent

limits. If the proposed effluent ammonia limits remain in the final permit, our rate-payers will face an unreasonable financial burden in an economically distressed community. Therefore, we believe the proposed limits should be removed from the permit because they would require us to provide a level of treatment in excess of that originally approved when our treatment plant was constructed. Furthermore, we question if the added treatment will provide any tangible benefit to the environment.

In citing the existing water quality standards (WAC 173-201A-040), the proposed ammonia limits appear to be calculated for the protection of aquatic life (Appendix E, page E-11). However, the receiving water is an agricultural drain, constructed and used for the disposal of excess irrigation water. Monitoring data collected from the receiving water consistently show ammonia concentrations to be higher upstream of the Wapato outfall than at both monitoring points downstream of the outfall (50 feet downstream and 300 feet downstream). The conclusion that can be drawn from this data comparison is the ammonia in our effluent has no effect on the ammonia concentration in the receiving water. We understand the theoretical procedures used to calculate the effluent limit, but the physical evidence shows the ammonia in our effluent is not increasing the ammonia concentration in the receiving water. This lack of influence on a receiving water classified higher than its long-term intended use, combined with the unreasonable economic impact to our community, justify the removal of the ammonia limits from our permit.

**Response:** In the State of Washington, water bodies are classified into one of five different classes. Each classification protects the water for specific uses and for specific water quality criteria. Classifications are found in the Water Quality Standards for Surface Waters of the State of Washington, WAC 173-201A-130 Specific Classifications - Freshwater. Drainage Way No. 2 is not directly classified in the standards, however, the regulations specify that all unclassified surface waters within the state shall be classified as Class A (WAC 173-201A-120 (6)). Class A designation under the State of Washington Water Quality Standards protects this water body for the following uses: water supply (domestic, industrial, agricultural), stock watering, fish and shellfish, wildlife habitat, recreation, and commerce and navigation.

EPA used the recommendations in Chapter 3 of the Technical Support Document for Water Quality-based Toxics Control (TSD, EPA 1991) to conduct the "reasonable potential" for Wapato's permit. In determining the reasonable potential of the effluent to exceed water quality standards EPA criteria allows the use of the 95$^{th}$ percentile of the upstream ammonia results. In this case that value was 1.2 mg/l. Given the low upstream flow, the high ammonia concentration in the receiving water, and the ammonia concentrations of the effluent, there was determined to be a reasonable potential for exceeding the water quality for ammonia. Using the criteria for the designated uses explained above, EPA calculated an ammonia concentration that is reflected in the Comparison of Technology-based Effluent Limits to Water Quality-based Effluent Limits table above.

**Fact Sheet Comments**

**Comment 9**: Page 3, Table of Contents: The heading "Proposed Effluent Limitations" should be written in capitals. The heading "SPECIALS CONDITIONS" should be rewritten to read "SPECIAL CONDITIONS."

**Response:** EPA recognizes this comment and will correct the Wapato file.

**Comment 10**: Page 5, Section I, APPLICANT: The City of Wapato contact should be changed to Marshall Munson, City of Wapato Public Works Director.

**Response:** EPA recognizes this comment and will correct the Wapato file.

**Comment 11**: Page 6, Section II.B.1, first paragraph: The first complete sentence at the top of the page should be changed to read, "The SBC effluent flows by gravity to two parallel Rotating Biological Contactor (RBC) units containing two shafts each." This change more accurately reflects flow through the treatment process.

**Response:** EPA recognizes this comment and will correct the Wapato file.

**Comment 12**: Page 7, Section III.B., first paragraph: The last sentence of the paragraph should be revised to read, "The volume of flow changes in the drainage way according to whether it is the *irrigation or non-irrigation season*."

**Response:** EPA recognizes this comment and will correct the Wapato file.

**Comment 13**: Page 10, Table 1, Proposed Effluent Limitations Compared to Current Limitations for Outfall 001 during the Irrigation Season (April 1 - October 31): The effluent limits for ammonia, effective 4 years and 6 months after the effective date of the proposed permit, appear to be incorrect. See discussion below regarding Appendix F calculations.

**Response:** EPA recognizes this comment see response to comment 1 above.

**Comment 14**: Page 10, Table 2, Proposed Effluent Limitations Compared to Current Limitations for Outfall 001 during the Irrigation Season (November 1 - March 1): The effluent limits for ammonia, effective 4 years and 6 months after the effective date of the proposed permit, appear to be incorrect. See discussion below regarding Appendix F calculations. In this table, the average weekly limits for ammonia should be entered in the Maximum Daily column, rather than in the Average Weekly column.

**Response:** EPA recognizes this comment see response to comment 1 above. The correction to the table is reflected in the Wapato file.

**Comment 15**: Page 12, Table 3, Proposed Monitoring Frequency of Effluent: We ask that the monitoring frequency for pH and temperature be changed from

"daily" to "weekdays" to be consistent with monitoring for residual chlorine, and with our treatment plant operations. Our current permit specifies a monitoring frequency of 5 per week. Though "weekdays" is acceptable, we believe the permit requirement would be more concise if the term "5 per week" were used to specify the monitoring requirements for pH, total residual chlorine, and temperature. The term "5/week" is used in Table 1 of the Draft Permit.

**Response:** EPA recognizes this comment and will correct the Wapato file.

**Comment 16**: Page 12, Table 3, Proposed Monitoring Frequency of Effluent: Our current permit specifies "1 per week" for fecal coliform monitoring, rather than the "weekdays" listed in this table. We ask that the monitoring frequency in the proposed permit be revised to "1 per week." This will reduce our testing expenses and will not require our personnel to come to the treatment plant on weekends to read fecal coliform test results.

**Response:** EPA agrees with Wapato's comment, the Permit has been changed accordingly.

**Comment 17**: Page 12, Table 3, Proposed Monitoring Frequency of Effluent: Footnote 2 of this table should be revised to read, "24-hour composite shall be collected on a timed basis in intervals no more than 15 minutes apart, or on a flow-proportional basis, such that a total of 80 to 100 samples are collected in a 24-hour time period."

**Response:** EPA recognizes the comment, however, EPA defines "24-hour composite" sample as a flow-proportioned mixture of not less than eight discrete aliquots. Each aliquot shall be a grab sample of not less than 100 mL and shall be collected and stored in accordance with procedures prescribed in the most recent edition of *Standard Methods for the Examination of Water and Wastewater*. This has been reflected in the Wapato file.

**Comment 18**: Page 14, Section VI: The heading for this section should be revised to read "SPECIAL CONDITIONS."

**Response:** EPA recognizes this comment and will correct the Wapato file.

**Comment 19**: Page 15, Section VII: A period should be added after "VII" in the title for this section.

**Response:** EPA recognizes this comment and will correct the Wapato file.

**Comment 20**: Page D-1, Appendix D, Section II.: The fifth sentence of the paragraph describing the treatment process should be revised to read, "The SBC effluent flows by gravity to two parallel Rotating Biological Contactor (RBC) units containing two shafts each." This change more accurately reflects flow through the treatment process.

**Response:** EPA recognizes this comment and will correct the Wapato file.

**Comment 21**: Page E-1, Appendix E, Section I.: The last sentence of the second paragraph should be revised to read, "... and water quality-based evaluation of effluent limitations for the City of Wapato." We believe this wording further clarifies the intent of the appendix.

**Response:** EPA recognizes this comment and will correct the Wapato file.

**Comment 22**: Page E-2, Appendix E, Section III.: The last sentence of the fourth paragraph should be revised to read, "Appendix F provides example calculations..." to provide the correct cross reference.

**Response:** EPA recognizes this comment and will correct the Wapato file.

**Comment 23**: Page E-6, Appendix E, Table E-2, Reasonable Potential Calculations for the Irrigation Season (April 1 through October 31): The value listed in the table for the Projected Downstream Conc (Cd) for acute ammonia appears to be incorrect. Based on the calculation procedures found in Appendix F, this value may be 29.3 mg/l. The calculation should be verified.

**Response:** EPA recognizes this comment see response to comment 1 above.

**Comment 24**: Page E-6, Appendix E, Table E-3, Reasonable Potential Calculations for the Non-irrigation Season (November 1 through March 31): The value listed in the table for the Projected Downstream Conc (Cd) for chronic ammonia appears to be incorrect. Since there is no dilution during the non-irrigation season, the projected downstream concentrations would be the same, 36.38 mg/l, for both chronic and acute conditions.

**Response:** EPA recognizes this comment see response to comment 1 above.

**Comment 25**: Page E-8, Appendix E, Section III.C.2., "End-of-Pipe" WLA: The word "irrigation" is misspelled in the last sentence.

**Response:** EPA recognizes this comment and will correct the Wapato file.

**Comment 26**: Page F-2, Appendix F, Section 2A: In the equation for Cx, there is a typographical error, but the equation results are correct. The value ".002" should be "0.02"

**Response:** EPA recognizes this comment and will correct the Wapato file.

**Comment 27**: Page F-7, Appendix F, Table F-1, Summary of Permit Limit Derivation for Outfall 001 at Drainage Way No. 2 During the Irrigation Season: Page F-6 states the ammonia concentrations were calculated the same as the limit for chlorine. While we were able to confirm the values listed in this table for chlorine, we could not confirm the maximum daily limit (MDL)

and average monthly limit (AML) values for ammonia. Our review of the ammonia calculations concurred with the values listed in this table through Acute LTA and Chronic LTA. It appears the correct value for the ammonia MDL should be 2.45 mg/l, and the value for ammonia AML should be 1.35 mg/l. The calculations should be verified.

**Response:** EPA recognizes this comment see response to comment 1 above.

**Comment 28**: Page F-7, Appendix F, Table F-2, Summary of Permit Limit Derivation for Outfall 001 at Drainage Way No. 2 During the Non-irrigation Season: Like the values for the irrigation season, we were able to confirm the values listed in this table for chlorine, but we could not confirm the maximum daily limit (MDL) and average monthly limit (AML) values for ammonia. Our review of the ammonia calculations concurred with the values listed in this table through Acute LTA and Chronic LTA. It appears the correct value for the ammonia MDL should be 2.65 mg/l, and the value for ammonia AML should be 1.45 mg/l. The calculations should be verified.

**Response:** EPA recognizes this comment see response to comment 1 above.

**Comment 29**: Page F-8, Appendix F, Table F-3, Comparison of Technology-based Effluent Limits to Water Quality-based Effluent Limits: The AML and IML values in this table for ammonia should be verified based on the review of the limits calculated in Tables F-1 and F-2. From our review of the calculations, we believe the correct limits are: Total Ammonia as N (April 1 through October 31) - Average Monthly Limit = 1.35 mg/l (13.1 lb/day), Instantaneous Maximum Limit = 2.45 mg/l (23.7 lb/day) and Total Ammonia as N (November 1 through March 31) - Average Monthly Limit = 1.45 mg/l (14.0 lb/day), Instantaneous Maximum Limit = 2.65 mg/l (25.6 lb/day).

**Response:** EPA recognizes this comment see response to comment 1 above.